

HIV in Females: A Clinico-epidemiological Study

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ABSTRACT

Background: Human Immunodeficiency Virus infected women account for almost half the number of cases of HIV worldwide. Despite reduction in HIV prevalence among the population, the percentage of Indian women contracting the disease seems to have increased. The social implications are also different in females. **Materials and Methods:** This prospective observational study was conducted from September 2009 to July 2011 at tertiary care hospitals attached to the Kasturba Medical College Mangalore, on a group of 200 HIV-positive patients. Patients above 18 years of age diagnosed with HIV as per National AIDS Control Organisation guidelines were included in the study. Clinical profile among women and men was compared with respect to clinical presentation, disease detection, CD4 count and response of family and society. **Results:** Clinical presentation was similar among both men and women. Eighty-one percent men had promiscuous sexual exposure, 19% of women had so. Males were identified to be HIV-positive earlier than their spouse (tested later), time lag being 27.6 weeks. After detection of positivity 77% of females felt being less cared for by the in-laws. CD4 count less than 50 was detected in more number of females as compared to men (11% females and 1% males). Death of spouse was seen more often in females (among 35% of women and 11% of men). **Conclusion:** Most of the females were likely to acquire infection from their spouse. Females tend to seek and get medical attention at the late stage of disease as compared to men. HIV in females has different social implications which includes discrimination within the family.

Keywords: CD4 count, females, HIV/AIDS, social

Introduction

At some point in the 1970s, unknown to the world, the Human Immunodeficiency Virus (HIV) gained a foothold and began its insidious spread, forever dividing the twentieth century into two eras—before and after AIDS.^[1]

India is home to approximately 2.5 million people living with HIV, the third largest number of cases of any country in the world.^[2-4] Despite recent reduction in HIV prevalence among both the general population and many high-risk groups, the percentage of infections occurring among the Indian women (currently estimated at 39%) has continued to rise in comparison to that among the men.^[4] Some women may be unaware of their male partners' risk factors for HIV infection.^[5]

Most of the women are infected with HIV through high-risk heterosexual contact.^[6] Women are more prone for HIV infection compared to men during intercourse.^[7] Recently released national HIV prevalence estimates for India indicate that 0.22% of

women and 0.36% of men aged 15-49 years are affected.^[8] The number of female patients who actually take Anti Retroviral Therapy are also very few, but they have higher propensity of developing Steven Johnson syndrome and symptoms of hepatic events from nevirapine.^[9]

Materials and Methods

The present study is a prospective cohort study in tertiary care hospitals attached to Kasturba Medical College Mangalore from August 2009 to July 2011. One hundred HIV-positive female patients and 100 HIV-positive males, who were above the age of 18 with confirmed HIV infection as per NACO guidelines were the subjects of the study.

These individuals were subsequently assessed thoroughly as per the protocol which included detailed clinical history including presenting symptoms, past history, disease diagnosis, family and social response towards the illness and complete physical examination followed by appropriate baseline and specific laboratory tests.

Ethical considerations

Confidentiality of the data collected was maintained. Written

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consent was taken from the patient to be a part of the study. Ethical clearance was obtained.

Results

Mean age was 37.4 years and 35.3 years for males and females respectively. Maximum number of patients belonged to the age group of 31 to 40 years in both genders with 55% of males and 63% of females falling in this age group. In the age group of 26–30 years females were more numbered as compared to males (22% females and 13% males).

Among males 17% were unmarried whereas only 2% females were unmarried which was statistically significant. Sixty-six percent of males had history of extramarital or premarital exposure whereas only 19% of the females revealed history of exposure [Table 1]. Among the married females 34 of them (34.7%) had already lost their husbands in comparison with males where 10.8% of them had lost their wives.

Occupation of wives of HIV-infected males showed that most of them (51.3%) were housewives. The remaining 39.3% were found to be doing unskilled work like manual labor. Spouse occupation among HIV-infected females showed maximum number (58%) of them doing skilled work like driving and the remaining 34.8% doing unskilled work like manual labor. Among males with HIV 61.4% had wives who were also positive for HIV whereas among females 86.7% of them had their partner positive for HIV; 10.8% of males with HIV were not aware of the HIV status of their wives and among females 1% did not know the HIV status of the husband.

Initial diagnosis of disease among both the groups showed that detection of disease was earlier in the case of the husband than the wife. Among the males 89.2% were diagnosed before their wives. Among female HIV patients 80.6% had diagnosis of disease first among their husbands [Figure 1]. Statistically significant time lag of 27 weeks was seen among females in comparison with males.

Among the males 73.3% of those with the disease received the same care from their wives after the disease diagnosis whereas only 60% of the females received same care from their husbands and 38.5% of females had decreased care from their husbands [Table 2]. Significant number of females (77.4%) also had decreased care from the in-laws.

Twenty-seven percent of men and 38% of women lost their job after the diagnosis of the disease. Awareness about ART was present among 80% in the male group and 76% among the female group. Seventy-six percent of the females informed that their children did not have the disease in comparison with the males who had only 48% of their children non-reactive for the disease. Twenty-seven (38%) in male group had not yet tested their children whereas in female group 16 (16%) of them had not tested their children for the disease. Twenty-one percent females

were on alternative medicines in comparison with males where 9% of them were taking alternative medicines.

Discussion

Women constitute 47% of all AIDS cases worldwide. Currently, almost half of all new HIV infections are being reported in women. Of these less than 50% are aware of their infection and 84% are in the reproductive age group that is 15 to 45 years.^[1] Most of these women are young, indigent and faced with social challenges that often pose more of an immediate threat to their well-being and that of their families than HIV.^[9] Approximately 90% of HIV-positive Indian women reported to be married and monogamous.^[8] Unprotected extramarital sex and sex with commercial sex workers by the husband is described as the most likely source of infection among women. Women can also transmit HIV to their offspring. So AIDS in women is a separate epidemic and approaches to its control need to be gender-specific.^[9]

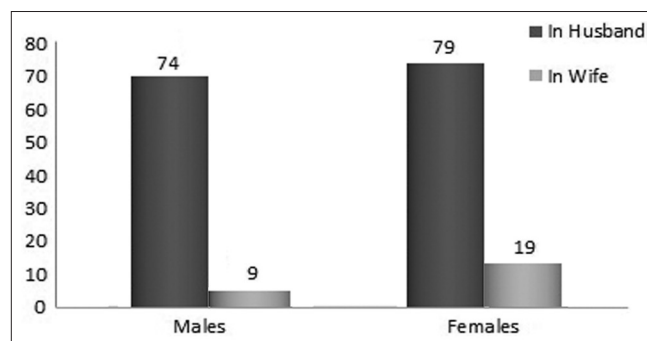


Figure 1: Initial diagnosis of disease

Table 1: Sexual exposure

Extramarital/Premarital sexual exposure	Gender		Total
	Males	Females	
No	34 34.0%	81.0 81.0%	115 57.5%
Yes	66 66.0%	19 19.0%	85 42.5%
Total	100 100.0%	100 100.0%	200 100.0%

$\chi^2=45.197$ $P < .001$ very highly significant

Table 2: Care of spouse towards the patient

Spouse care towards patient	Sex		Total
	Male	Female	
Decreased	13 17.3%	25 38.5%	38 27.1%
Same	55 73.3%	39 60.0%	94 67.1%
Increased	7 9.3%	1 1.5%	8 5.7%
Total	75 100.0%	65 100.0%	140 100.0%

$\chi^2=10.939$, $P = 0.004$, HS

The mean age was 36.4 years in the the study population which is similar to other reports. In a study Sircar *et al.*,^[10] reported that the mean age of presentation was 34.9 years. In another study by Kothari *et al.*,^[11] mean age at presentation was 32.76 years.

Maximum number of patients belonged to the unskilled work group (49% among males and 54% among females), most of them were manual laborers. Twenty-five percent of the females were housewives. Skilled workers included drivers, clerks and others and males dominated over females in this group (34% males and 18% females). In a study by Chennaveerappa *et al.*,^[13] it was observed that the most common source of income for the male seropositive subjects was unskilled occupation (30%); 12.3% of the male seropositive subjects were drivers. Among the females, 36.8% were housewives and 20% were unskilled (laborers and housemaids). This reflects that high-risk behavior is more among the unskilled workers who usually belong to the low socioeconomic status.

Sixty-nine percent of males and 72% of females had fever at the time of presentation. Loss of appetite and weight was the predominant feature among both groups (82% each). Sixty-eight percent of males and 69% of females also had cough as a predominant symptom. Among the females a significant number of them (39%) presented with altered sensorium compared to males (6%). Opportunistic infections such as TB meningitis, toxoplasmosis or cryptococcal meningitis were the reasons for altered sensorium and were observed more commonly in females.

In our study 17% of the men were unmarried and only 2% females were unmarried.

Sixty-six percent of males had history of extramarital or premarital exposure whereas only 19% of the females revealed history of exposure which highlights the high-risk behavior among the males. The UN Refugee Agency December 2006,^[14] reported that, in Kawambwa 18% of refugees (29% men and 10% women) and 22% of surrounding community residents (37% men and 11% women) married (either polygamous or monogamous) or living with a partner had a sexual relationship with another regular partner(s) in the last 12 months while 10% of refugees (20% men and 3% women) and 13% of surrounding community residents (28% men and 2% women) had sex with a non-regular partner in addition to their spouses. This study also reflects that high-risk behavior is more common in males compared to females.

As per National Commission on Macroeconomic and Health India report^[15] clearly showed that in high prevalence area like Karnataka, Andhra Pradesh, Maharashtra and Tamil Nadu males had higher prevalence 12.9 compared to females 4.4. Our study also indirectly reflects that men have more high-risk behavior compared to women and their high-risk behavior may result in disease among their partners.

In this study, among male patients who did not know the HIV status of spouse the majority had not revealed their HIV status

to the wife or had never asked the wife to get tested for HIV. In the report by Pradhan *et al.*,^[16] it was noted that 7.1% of males and 7.5% of females with HIV did not disclose their illness to their spouse. In our study there was a significant difference in the awareness of the HIV status of the spouse suggesting that there is a need for concentrating on the wives of HIV-infected males and to evaluate them for the disease so that detection and treatment can be started much early.

Among the married females 34 of them (34.7%) had already lost their husbands in comparison with males where 10.8% of them had lost their wives.

As per study Gender impact of HIV and AIDS in India, among men 71.1% were married and 48.8% women were married; 3.7% men were either separated/divorced from or had abandoned their wives as in comparison with women in whom 7.4% were either separated/divorced/abandoned from their husbands. 4.3% in male group were widowed whereas 36.1% in female group were widowed.

Initial diagnosis of the disease among married persons, in both the male and female group was analyzed in the study. In both the groups it was found that men had been diagnosed earlier than their wives (89% of husbands in the male group and 80% of husbands in the female group). This highlights the fact that men have more high-risk behavior compared to women. Time lag among the females for the diagnosis of the disease after the detection of reactive status among the husbands was on an average 27.6 weeks. This indicates that men seek medical attention much earlier than women and high-risk behavior among men with unawareness of this high-risk behavior among the wives makes them more vulnerable for acquiring the disease unknowingly.

Gender Impact of HIV and AIDS in India, by Pradhan *et al.*^[16] revealed lack of care from spouse or family members among 6.9% HIV-infected males and 12.3% of HIV-infected females in the form of neglect or isolation or verbal or physical teasing; 5.5% women were asked to leave the home whereas among men 1.9% were asked to do so. Our study also reflects that women with HIV are less taken care of by their husbands or husband's family.

In this study 27% of men and 38% of women informed that they had lost their job after the diagnosis of the disease. In the report by Pradhan *et al.*,^[16] loss of job was seen among 9.9% men and 1.6% women. In our study it is evident that even today HIV is associated with social stigma resulting in unemployment among HIV-infected patients. Some of them lost their job due to inability to work due to sickness associated with the disease.

In this study 76% of females informed that their children did not have the disease where as 48% children among male group did not have the disease. Twenty-seven (38%) of them had not yet tested their children in male group as in comparison with female group were 16 (16%) of them had not tested their children for the disease. From this data it is evident that men with HIV had

less responsibility towards their children thereby increasing the undetected disease burden in the community.

Our study showed that 21% females were on alternate medicines in comparison with males where 9% of them were taking alternative medicines. This shows us the fact that even with availability of free ART, people seek alternative therapies. This may be attributed to unawareness about treatment or stigma or misconceptions about the treatment of HIV/AIDS.

CD4 count at the time of diagnosis of the disease was compared among males and females in our study. Eleven percent of females had CD4 count of less than 50 in comparison with 1% males who had CD4 count of less than 50. Among CD4 range of 100 to 150 males (31%) were more numbered as compared to females (17%).

Lower CD4 count among the females could be due to delayed diagnosis of the disease among them or due to delayed health-seeking behavior.

Conclusion

Women are at increased risk of HIV due to high-risk behavior among men and delayed presentation. Lack of care towards the women with HIV is a matter of concern. Unawareness of illness among the spouses is the most plausible explanation for the delayed presentation of females with the disease, also social stigma adds to this. A better approach towards the disease by addressing specific issues among female patients can help us in preventing rapid spread in the community.

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